

THE EXIT FROM THE CRISIS OF LABOUR MARKET IN ITALY: AN ANALYSIS WITH FLOW DATA

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1. Introduction

The return to growth of the main indicators of the Italian economy, starting in 2014, provides hope in the end of the worst crisis since World War II. The parameters, however, still show weak levels and fluctuating trends in some cases. The labour market is no exception with respect to the overall context that, although encouraging, still shows elements of uncertainty. The sharp fall in employment recorded in the years 2008-2013, is one of the most tangible signs of the long period of difficulty that Italian society has crossed, so it is also the main area where all people hope to spot the signs of an improvement in the situation of the country.

Since December 2015, Istat, the Italian National Institute of Statistics, has included in the quarterly press release on the labour market also estimates resulting from the longitudinal component of the Labour Force Survey (hereinafter RFL), with the aim of providing an additional tool to the analysis of occupational situation.

The main aim of this paper is trying to understand, through an analysis of flow statistics, if the recession on the labour market has reached the end, and if it is possible identify clear signals that indicate reversal of the trend and not only a short period of positive conjuncture. In addition, it is particularly important to establish who has enjoyed greater benefits from the changed economic situation (and at the same time who has provided a significant contribution) and who still suffers the effects of a stagnant situation and has failed to intercept the benefits of a more favorable economic phase.

2. Data and methods

In this paper we use the flow statistics of the Labour Force Survey relative to the time period from third quarter 2012 to fourth quarter 2016. Longitudinal data

(Istat, 2015b) are used to quantify the quarter-on-quarter transitions between labour market statuses (unemployment, employment and inactivity), through comparison of the occupational status and its most specific characteristics, measured on the same individuals at the distance of 3 and 12 months.

The production of flow statistics is made possible thanks to the particular design of the survey sample. The sample is based on a two-stage design: municipalities and households. The first-stage units, municipalities, are stratified within each province depending on the width demographic. The households are extracted from the municipal registers with a simple random sampling: three substitute households are provided for each household. All members of 15 years and over are interviewed; instead people who permanently live in cohabitation are excluded from the sample¹.

The survey design includes a sample rotation scheme so that each quarterly sample is composed of 4 rotation groups respectively to the first, second, third and fourth occasion of investigation. The households belonging to each group of rotation entering the sample and are interviewed for two consecutive quarters, after a pause of two quarters, they are re-included for other two quarters, following a scheme called 2-2-2. This means that half of the households of each quarterly sample results overlapped at distance of 3 and 12 months, a quarter to 15 months apart.

As it's known, this is not an actual panel, as an individual is not "followed" if one moves to another municipality or abroad over a period of time between an interview and the next. It follows that, in a defined period of time, the longitudinal component does not represent the whole population but only one resident in the same municipality both the beginning and end of the period. The information gathered on the same sample at different times offer a privileged perspective to study career paths of people and the dynamics of the labour market.

The longitudinal component allows identifying both the number of incoming and outgoing transitions between the different labour market statuses (employment, unemployment and inactivity), both the permanence within the same condition in the two instants of time. In other words it is possible to measure the probability of moving from or remaining in a particular labour market status over any one-year period. It's possible to know, for instance, how many find jobs after a year among those seeking work, or how many remain unemployed, or how many are involved in transitions between self-employment and dependent or between fixed-term contracts and permanent contract and so on.

¹ For further details see the methodological note (Istat 2016th) attached to the press release of the first quarter of 2016 <http://www.istat.it/it/archivio/186895>.

In the Italian flow matrix the populations are not the same in the two quarters, and the difference between the initial quarter distribution and the final quarter distribution is explained with the following estimates: those who died during the period; those who left the country; of those who became 15 years old during the period; those who entered in the country during the period.

The main flow indicators, for the informative contribution they provide, are the transition and permanence rates and the reallocation rates (Contini e Trivellato 2005).

The **transition rate**: the transition between two labour market statuses is calculated as the share of a transition in percentage of the labour market status in the initial quarter. The rate is comparable to the probability of moving to a different condition from the beginning to the end of a given period. This rate is also used to examine the transitions between different types of employment (e.g. from fix-term contract to permanent contract). For example the transition rate for the flow between unemployment to employment is calculated as:

$$TRu = \frac{UE}{(UE+UU+UI)} * 100$$

The **permanence rate**: the permanence in the same labour market status is calculated as the share of permanence in percentage of the labour market status in the initial quarter (for example, how many employed persons at the beginning of the period are employed also after 12 months). The rate is comparable to the probability of remaining in the same status at the end of period.

$$Pre = \frac{EE}{(EE+EU+EI)} * 100$$

The **composition ratio**: the transition between two labour market statuses is calculated as the share of a transition in percentage of the labour market status at final quarter: (i.e. the proportion of employed, unemployed and inactive at the starting period on the total of employed at the end of period).

$$CRe = \frac{UE}{(EE+UE+IE)} * 100$$

The **reallocation rate for hiring**: (RRh) is calculated as the share of people entering employment in percentage of the sum of those remain employed, move in and out of employment in the same period.

$$RRh = \frac{UE+IE}{EE+(UE+IE)+(EU+EI)} * 100$$

The **reallocation rate for separation** (RRs) is calculated as the share of people leaving employment in percentage of the sum of those remain employed, move in and out of employment in the same period.

$$RRs = \frac{EU+EI}{EE+(UE+IE)+(EU+EI)} * 100$$

E = Employed; U = Unemployed; I =Inactive; EE = Employed at t0 and at t1;
 UE = Unemployed at t0, Employed at t1; IE = Inactive at t0, Employed at t1;
 EU = Employed at t0, Unemployed at t1; EI = Employed at t0, Inactive at t1.

The reallocation rates represent a measure of the incoming and outgoing occupation movements and, if compared, determine the balance between the two periods that is a synthetic measure of labour market dynamics.

This paper presents the main indicators of period from the III quarter 2012-III quarter 2013 to the IV quarter 2015-IV quarter 2016 (henceforth also 2015Q4-2016Q4) to verify the output of Italy from the long economic crisis in the longitudinal perspective.

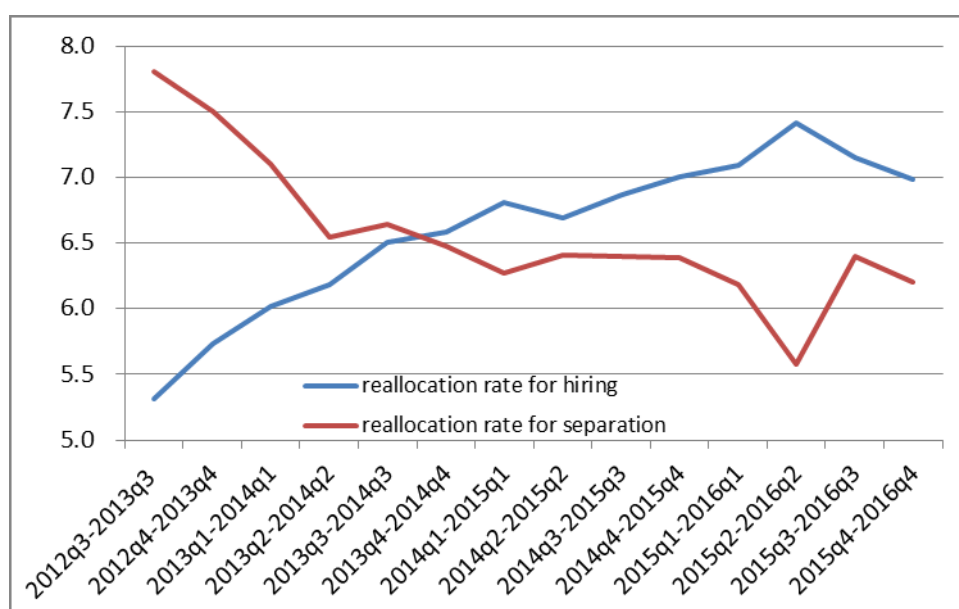
The focus on reallocation rates by the main socio-demographic characteristics (gender, age, education level and geographic distribution) allows highlighting where the signs of vitality of Italian labour market on supply side come from. It also allows analyzing the composition of the hiring by different characteristics.

3. Results

Flows data show that the balance between those who enter employment (not employed at the beginning which are employed at end of period) and those who come out (employed at beginning that are not employed after one year) was largely negative from third quarter of 2013, is canceled in the fourth quarter of 2014, while from the first quarter of 2015 becomes positive (the inputs are more than outputs) and reaches the maximum value in the second quarter of 2016, then it decreases but remains positive over the last two quarters. These trends are

illustrated by the performance of reallocation rates of employed persons aged 15-64 (Figure 1) expressing a synthetic measure of the input and output labour market dynamic, within a year. In particular, the reallocation rate for hiring passes, with a constantly increasing trend, from 5.3% of the 2012Q3-2013Q3 to 7.4% of 2015Q2-2016Q2 then declines to 7.0% in 2015Q4-2016Q4, whereas the reallocation rate for separation decreases in the same period from 7.8% to 5.6% and then up to 6.2%.

Figure 1 – *Employment Reallocation rate for hiring and separation (age group 15-64). 12 months flow statistics.*



Source: Labour Force Survey, Italy

To drag in positive territory the input-output balance are primarily men: their inversion shows more determined characters (until the second quarter 2016) whereas for the female component the trend is oscillating (Figure 2). From the third quarter 2013 to fourth quarter 2016, the reallocation rate for hiring increased from 4.4% to 6.1% for males, on the contrary the reallocation rate for separation decreases from 7.1% to 5.5%; the tendency for females in the period is the same but the balance has lower values, from 6.6% to 8.1% (inputs) and from 8.7% to 7.2% (outputs).

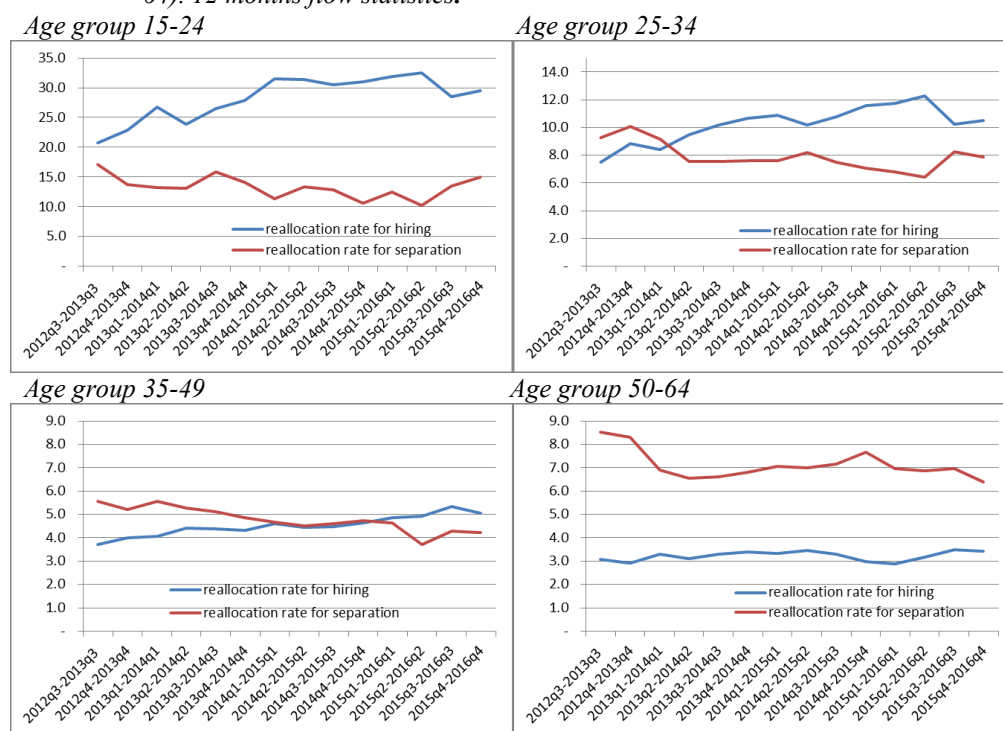
Figure 2 – Employment Reallocation rate for hiring and separation by sex (age group 15-64). 12 months flow statistics.



Source: Labour Force Survey, Italy

A substantial contribution to employment growth is provided by the young people: in addition to the steady increase in the positive balance of the age group 15-24 aged, there has been a turnaround for the group 25-34 aged, where the overtaking of inputs to outputs occurs even with three quarters in advance of total employment (Figure3). A significant contribution to this change also comes from the following age group (35-49), which represents the largest employment basin, where the balance between hiring and separation (always negative in the previous periods) comes close to zero in 2014Q1-2015Q1, remains virtually zero for more than a year, to finally become positive from 2015Q2-2016Q2. At the beginning of period the oldest age class records a reduction in output as a result of increased permanence of this segment of the population in employment. However, in the period from 2013Q1-2014Q1 to 2014Q3-2015Q3 there were no significant changes, and the difference between inputs and outputs remains almost constant. In the fourth quarter 2015 there is an increase in outputs which then re-started to decrease.

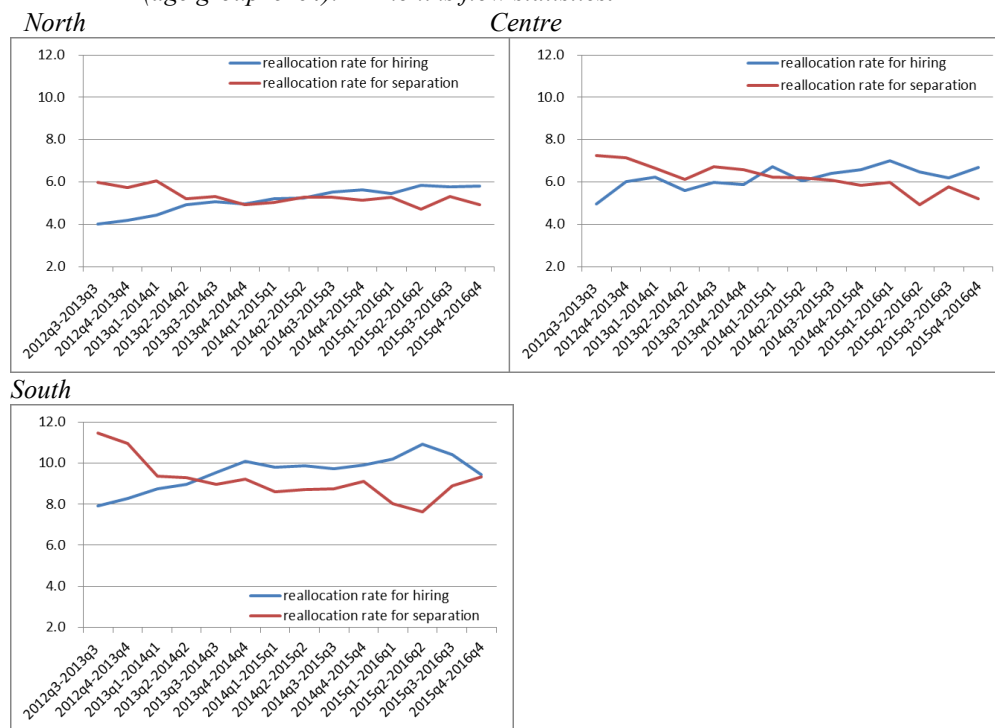
Figure 3 – Employment Reallocation rate for hiring and separation by age (age group 15-64). 12 months flow statistics.



Source: Labour Force Survey, Italy

At national level, the shot shows a predominantly southern profile for most of the period: in the South from the third quarter of 2014 the unemployed persons who find a job after one year, exceed those that go out from occupation, but from the third quarter 2016, the route is reversed and the last period (2015Q4-2016Q4) the balance becomes zero. In the same period the negative dynamic that had affected the North in the previous period runs out, while the Center, from the third quarter of 2015, records a positive balance between inputs and outputs albeit with ups and downs. In the interval that marks the turnaround, the 2015Q1-2016Q1, the reallocation rate for hiring and the one for separation are respectively 5.5% and 5.3% in the North, 7.0% and 6.0% in the Center and 10.2% and 8.0% in the South. In the last period the positive balance is only for North and Center (figure 4).

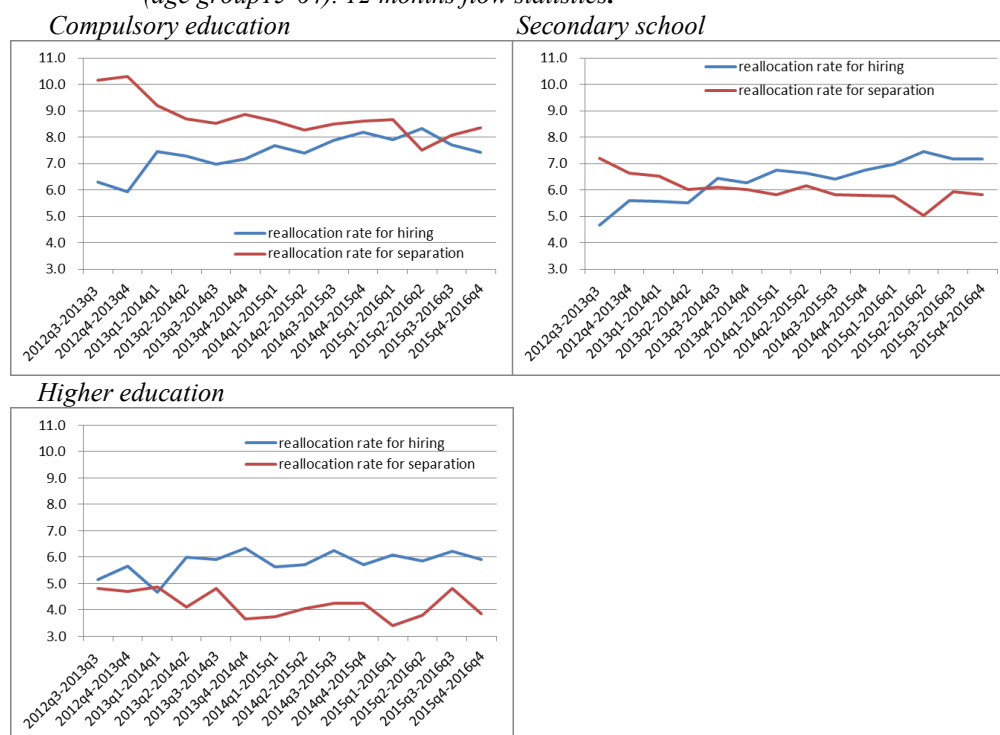
Figure 4 – Employment Reallocation rate for hiring and separation by geographical area (age group 15-64). 12 months flow statistics.



Source: Labour Force Survey, Italy

Who has a university degree has benefited from the trends to recovery in advance of the less educated and in particular of those who have at most compulsory education for whom the input-output balance was strongly negative over the period considered, except in 2015Q2-2016Q2 when there has been a short overrunning of the inputs with respect to the outputs (figure 5). For the most educated the inputs were lower than the outputs only in the first quarter of 2014, while for the secondary school graduates, the turnaround, from negative to positive, is recorded starting from the third quarter 2014. In 2015Q4-2016Q4, the reallocation rate for hiring and separation are equal to 7.4% and 8.3% respectively for those with at most the lower secondary school license, to 7.2% and to 5.8% for the upper secondary school graduates and to 5.9% and 3.9% for graduates.

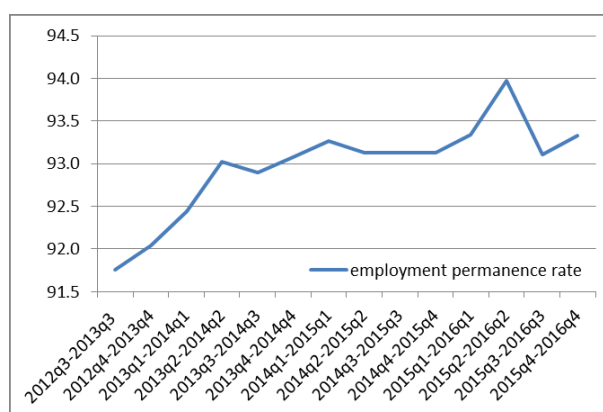
Figure 5 – Employment Reallocation rate for hiring and separation by education level (age group 15-64). 12 months flow statistics.



Source: Labour Force Survey, Italy

The improvement of labour market conditions is not due only to the higher employment inputs and lower outputs. At the same time increase the number of employed that after one year remain in the same condition: the rate of employment permanence passes, in fact, from 91.8% of the 2012Q3-2013Q3 to 93.3% of 2015Q4-2016Q4 (Figure 6). At the same time the share of those find a job from an unemployment condition also increases more than five percentage points, from 19.5% to 24.6%. This positive trend is also for the inactive, albeit less marked, for which the transition to employment passes from 5.4% to 6.8%.

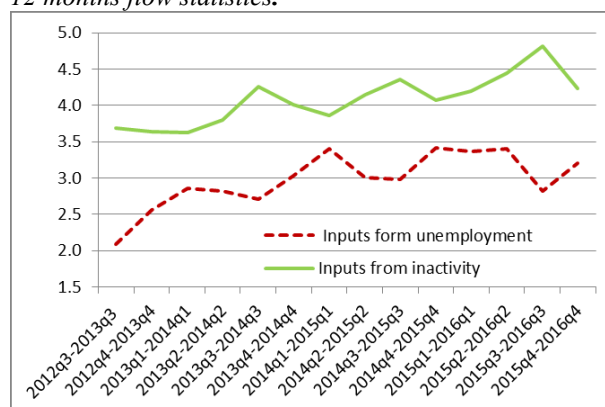
Figure 6 *Employment permanence rate (% on employed persons at t0, age group 15-64). 12 months flow statistics.*



Source: Labour Force Survey, Italy

Looking at the percentage composition of the new employment according to the origin condition, the largest contribution comes from inactivity that is to say by those who were not employed and were not looking for a job one year before. The share of total employment at the end of the period rises from 3.7% of 2012Q3-2013Q3 to 4.2% of 2015Q4-2016Q4. More limited in terms of numbers, but in growth throughout the period, the share of new jobs coming from unemployment: the labor market's capability to absorb seekers rose from 2.1% to 3.2% in the same period (Figure 7).

Figure 7 - *Composition rate by employment status at t0 (% on employed persons at t1). 12 months flow statistics.*



Source: Labour Force Survey, Italy

The contribution of longitudinal data is not limited to the analysis of 12 months flows, even the short-term analysis shows interesting data: 3 months flows show a cyclical trend of the balance between inputs and outputs with positive peaks in the interval between the first and second quarter followed by a decreasing trend that leads to negative peaks between the fourth and the first quarter. The 2016 has recorded a higher positive peak (+ 1.7% of inputs compared to the outputs) of the corresponding in 2015 (+ 1.5%) and in 2014 (+ 1.0%), leading to hopes in a better overall situation. Variations of 3 months flows in any case need to be subjected to seasonal adjustment procedures, so relative analysis is still experimental but it could be a useful tool for understanding the dynamics of the Italian labour market.

4. Conclusion

The analysis of the labour market data using statistical flows shows employment recovery signals from the end of 2014. The positive sign of the comparison between occupation inputs and outputs certifies the recovery throughout 2015 and is confirmed in the data of 2016, reaching its peak in the second quarter, subsequently it decrease slightly but the trend is however positive.

Employment growth has involved mostly men, young people, and the residents in the South, the most affected during the crisis, and those for which the positive trend was more marked in advance. Moreover, the recovery has involved more people with higher educational qualifications, instead the less educated are not yet out of the crisis, although reducing the gap of hiring to separation from 2015 and 2016. The details of the flow data show with punctuality that both the permanence of the employed both inputs from unemployment and inactivity increase throughout the considered period.

Anyway, the slight decrease of the indicators of the last two time intervals concerns especially the young people, the residents in the South and the less educated. These usually represent the most vulnerable groups in the labor market, and for them the real end of the crisis could be at risk.

The exit from the crisis, therefore, is also reflected in the longitudinal data, nevertheless seems to still have uncertain contours. As evidenced by other data sources, it should be said that at this stage we are seeing a "persistent growth albeit at low intensity" (Istat 2016b).

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SUMMARY

The exit from the crisis of labour market in Italy: an analysis with flow data

This work presents the main results of yearly flows of the Labour Force survey, which are also disseminated in the Italian quarterly press release since the fourth quarter of 2015.

Considering the period from the third quarter 2012 to fourth quarter 2016, the yearly flows data highlight the dynamics of the labour market that have led out to the crisis, albeit slowly.

The indicators derived from the cross-sectional data of survey show that, as early as the second half of 2014, a slight positive trend has taken place and it has strengthened during 2015 and 2016. A so long period of positive signs, albeit weak and in some cases exposed to monthly fluctuations, allows to state that the worst seems behind us.

Longitudinal data allow analysing the transitions between employment statuses during the time and the main features of the population involved. Through this perspective, the positive trends become even sharper and assume greater evidence.

In fact, in 2015 and particularly in 2016 there are been a growth of transitions from non-employment to employment, greater permanence in employment. The reallocation rate, a summary indicator of employment trends, shows a rising trend in recent periods and the comparison between its two components, that describe in and out movements, marks a positive result (more hiring than separations) in both year after crossing a negative path in previous periods.

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